

**ARIZONA GAME AND FISH DEPARTMENT
HERITAGE DATA MANAGEMENT SYSTEM**

Animal Abstract

Element Code: AMACC01020

Data Sensitivity: Yes

CLASSIFICATION, NOMENCLATURE, DESCRIPTION, RANGE

NAME: *Myotis yumanensis*
COMMON NAME: Yuma Myotis
SYNONYMS: *Vespertilio yumanensis*
FAMILY: Vespertilionidae

AUTHOR, PLACE OF PUBLICATION: *Vespertilio yumanensis* H. Allen, Smithson. Misc. Coll., 7:58, 1864. *Myotis yumanensis* G. S. Miller, Jr., N. Amer. Fauna, 13:66, 1897.

TYPE LOCALITY: Old Fort Yuma, Imperial County, California.

TYPE SPECIMEN:

TAXONOMIC UNIQUENESS: There are 88 species of *Myotis* worldwide. According to NatureServe (2001), *M. yumanensis* specimens are often confused with *M. lucifugus*. These species appear to be closely related. See Harris (1974) for the most recent taxonomic revision of this species. *Myotis yumanensis* has six subspecies: *Myotis yumanensis yumanensis* (southwestern desert), *Myotis yumanensis lambi* (San Ignacio, Baja California), *Myotis yumanensis sociabilis* (California to Canada), *Myotis yumanensis oxalis* (Central Valley) and *Myotis yumanensis saturatus* (western Coast from Mexico to BC), *Myotis yumanensis lutosus* (Mexico).

DESCRIPTION: One of the smallest *Myotis*, total length 75-89 mm (2.9-3.5 in.), forearm 34.0-38.0 mm (1.36-1.52 in.), tail 29-43 mm (1.14-1.69 in.), hind foot 8.0-10.0 mm (0.32-0.4 in.), ear 14.0-15.0 mm 0.56-0.6 in.), and 4-7 g in weight. The fur is dull, lacking the brassy sheen typical of other myotis such as *M. lucifugus*. Upper parts are tawny, buffy or even brown, while under parts are paler, buffy to yellowish white. Hairs on the dorsum are not tipped with a brighter brown. They have large feet with a lobed calcar (no keel on calcar), and a tail that barely extends beyond the membrane. Their short ears are usually light or pale (same color as back), and have a pointed tragus. The braincase is broad and high, lacking a sagittal crest.

AIDS TO IDENTIFICATION: Yuma Myotis (*M. yumanensis*) has larger feet and lighter ear/fur color than Western Small-footed Myotis (*M. ciliolabrum*) and California Myotis (*M. californicus*), along with short ears, braincase rising abruptly from level of rostrum, and lack of keeled calcar. The interfemoral membrane is haired nearly to knee. The Cave Myotis (*M. velifer*) is larger, and the Little Brown Myotis (*M. lucifugus*) is very difficult to distinguish but

usually has a longer forearm. The California, Eastern Small-footed (*M. leibii*), Western Small-footed and Long-legged (*M. volans*) *Myotis* have a keeled calcar.

ILLUSTRATIONS: B&W drawing (Ingles 1954:74)

Color photo (Tuttle *in*

http://www.enature.com/fieldguide/showSpecies_LI.asp?imageID=18891)

Color photo (Altenbach *in*

<Http://sevilleta.unm.edu/data/species/mammal/sevilleta/profile/yuma-myotis.html>)

Color photo (Harvey 1999)

Color photo (Wilson 1999)

TOTAL RANGE: Western North America from British Columbia south through the western United States to Mexico (Hidalgo, Michoacan and Baja California), and east to Montana and western Texas.

RANGE WITHIN ARIZONA: Throughout most of state but not found in northeastern corner nor southeastern part of state. Particularly found in the Gila, Graham, La Paz, Maricopa, Mohave, Pinal, and Yuma counties (AGFD, unpublished data). Probably absent in higher, boreal areas. Winters in the Lower Colorado River area.

SPECIES BIOLOGY AND POPULATION TRENDS

BIOLOGY: In summer, *M. yumanensis* is found in Arizona near water over which it forages for food, usually flying low to the water (about 6 feet). They are more closely associated with water than any other North American species of bat (Barbour and Davis 1969). They can be found roosting in caves, mines, attics, buildings, underneath bridges, and other similar structures. In the summer, males tend to roost singly or in small groups away from nursery colonies. This nocturnal species probably makes local or short migrations to suitable hibernacula for the winter. For example, individuals that spend the summer at high elevations probably move downslope. In Arizona, some individuals may overwinter in the southwest part of the state, but the rest probably migrate to Mexico. Tends to be lunar phobic due to a preference for lunar phobic insects or to avoid predators such as owls. They emerge soon after sunset in many areas but their peak activity is 1-2.5 hours after sunset. The Yuma myotis may be found feeding and roosting with other bat species, such as *Tadarida brasiliensis* and *Antrozous pallidus*, and occasionally hybridizes with *M. lucifugus*.

REPRODUCTION: Copulation probably occurs in the fall and fertilization in the spring.

About 35 females occupy a roost. Nursery colonies are usually in buildings, caves, and mines or under bridges. One young is born between May 25 and June 5. By early July, most young are able to fly, but a few may be still be nursing.

FOOD HABITS: Water surface forager feeding extensively on small moths (78.6 percent by frequency) and other small insects including dipterans and even some ground beetles. They

can consume up to half of their weight every night. They usually fly low to the water (about 6 feet) to capture prey. They catch the insects either in their mouths or use their tail membrane as a pouch in which to snare larger prey. The Yuma myotis is an efficient forager, sometimes returning to the roost with a full stomach 15 minutes after dusk. These bats respond to temporary patches of prey, such as ant swarms, although many authors report that regular foraging routes are followed. They have a relatively poor urine concentrating ability, and are frequently observed drinking water.

HABITAT: Found in a wide variety of upland and lowland habitats, including riparian, desertscrub, moist woodlands and forests. Prefers cliffs and rocky walls near water. They are a colonial species, hanging in closely grouped clumps, utilizing caves, mines, cliff crevices, attics, buildings, underneath bridges, and similar structures. Nursery colonies (sometimes in the thousands) are usually in buildings, caves, and mines or under bridges.

ELEVATION: Sea level to 11,000 ft. (0-3,355 m) for the range. According to AGFD HDMS unpublished records (accessed 4-3-03) they have been found ranging from 180-4,760 ft. (55-1450 m).

PLANT COMMUNITY: Riparian, desertscrub, moist woodlands (juniper-pinyon) and forests.

POPULATION TRENDS:

SPECIES PROTECTION AND CONSERVATION

ENDANGERED SPECIES ACT STATUS: None (USDI, FWS 1996)
[C2 USDI, FWS 1994]

STATE STATUS:

OTHER STATUS:

MANAGEMENT FACTORS: Threats include disturbance of maternity colonies (highly susceptible to disturbance; abandoning site), closure of abandoned mines and pest control activities. They are also threatened by the loss of riparian habitats and the decline in permanent water sources.

PROTECTIVE MEASURES TAKEN:

SUGGESTED PROJECTS: Survey for roosts, and determination of migration routes.

LAND MANAGEMENT/OWNERSHIP: BIA - San Carlos Reservation; BLM - Havasu and Arizona Strip Field Offices; FWS - Imperial National Wildlife Refuge; USFS - Tonto National Forest; Boyce Thompson Southwestern Arboretum; Private.

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MAJOR KNOWLEDGEABLE INDIVIDUALS:

James Findley - University of New Mexico

ADDITIONAL INFORMATION:

May be extremely difficult to identify to species even in a museum. If in doubt, specimens should be sent to an authority for identification.

This bat has recently been observed up on the Navajo Reservation (AGFD 1996).

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